



University of Colombo, Sri Lanka

University of Colombo School of Computing



**DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY
(EXTERNAL)**

Academic Year 2024 — 2nd Year Examination — Semester 4

IT4406 — Agile Software Development

Part 1 - Multiple Choice Question Paper

(2 Hours for both Part 1 and Part 2)

Important Instructions

- This paper has **two (2) parts, Part 1 and Part 2**.
- The total duration of **both Part 1 and Part 2 is 2 hours**.
- The final mark for the paper will be determined by averaging the scores of Part 1 and Part 2, each of which is graded out of **100**.
- The medium of instructions and questions is English.
- This paper (Part 1) has **25 MCQ questions on 8 pages**. Answer **all** questions.
- Each question will have **5 (five)** choices with **ONE OR MORE** correct answers.
- There will be a penalty for incorrect responses to discourage guessing.
- The mark given for a question will vary from -1 (All the incorrect choices are marked & no correct choices are marked) to +1 (All the correct choices are marked & no incorrect choices are marked). However, **the minimum mark per question would be zero**.
- Answers should be marked on the **special answer sheet** provided.
- Note that questions appear on both sides of the paper. If a page or part of a page is not printed, please inform the supervisor/invigilator immediately.
- Mark the correct choices on the question paper first and then transfer them to the given answer sheet which will be machine marked. **Please completely read and follow the instructions given on the other side of the answer sheet before you shade your correct choices**.
- Any electronic device capable of storing and retrieving text, including electronic dictionaries, smartwatches, mobile phones, and Calculators are **not** allowed.
- *All Rights Reserved*. This question paper can NOT be used without proper permission from the University of Colombo School of Computing.

1). In Agile software development, *the primary measure* of progress is:

- (a) The number of lines of code written
- (b) The amount of working software delivered
- (c) Adherence to the schedule (i.e., on-time task completion)
- (d) The percentage of requirements documented
- (e) Budget utilization versus planned cost

2). Which of the following statement(s) is/are aligned with Agile principles?

- (a) Accept changing requirements even late in development, adapting plans as needed
- (b) Freeze requirements at the start to avoid scope changes during the project
- (c) Deliver value in frequent releases rather than one release at the end
- (d) Defer decisions until the last responsible moment
- (e) Rely on detailed upfront planning to get the plan *right* and then follow it

3). Which of the following is/are (a) *core principle(s)* of Kanban as applied in an Agile setting?

- (a) Maximize work-in-progress to utilize full developer capacity
- (b) Use timeboxing to control sprint duration and scope
- (c) Visualize the workflow and limit work-in-progress to improve flow efficiency
- (d) Refactor all code at the end of each iteration
- (e) Assign tasks based on seniority to streamline delivery

4). In Scrum, which of the following are considered *artifacts*?

- (a) Product Backlog
- (b) Sprint Backlog
- (c) Risk Register
- (d) Phase Gate Checklist
- (e) Product Increment

5). Which of the following is/are (a) best practice(s) for writing User Stories in Agile?

- (a) Self-contained, with minimal overlap or dependency on other stories
- (b) A written contract in the form of an up-front requirements document
- (c) Delivers clear value to the user or customer
- (d) Written by developers to ensure alignment with implementation plans
- (e) Testable in a binary way (i.e., pass or fail)

6). Which of the following responsibility/responsibilities is/are associated with the Product Owner in Scrum?

- (a) Ensuring the team strictly follows Scrum rules and ceremonies
- (b) Prioritizing the Product Backlog
- (c) Defining and conveying the product vision to the team and stakeholders
- (d) Creating technical architecture for the development team
- (e) Assigning individual tasks to development team members during the Sprint

7). Which of the following best describes the purpose of the Sprint Retrospective in Scrum?

- (a) To estimate upcoming user stories using a systematic method
- (b) To inspect and adapt or identify improvements for the team's processes
- (c) To plan the development workload for the next Sprint
- (d) To demonstrate the Increment to stakeholders
- (e) To refine the Product Backlog in an interactive manner

8). Which activity/activities is/are not part of ongoing Product Backlog Grooming (Refinement) in Agile?

- (a) Prioritizing backlog items to ensure the most valuable work is done first
- (b) Estimating backlog items (e.g., assigning story points with the team)
- (c) Breaking down large user stories (epics) into smaller, more manageable stories
- (d) Reviewing the team's sprint velocity trend
- (e) Removing or reassessing outdated backlog items that are no longer needed

9). Regarding Sprints in Scrum, which of the following is/are incorrect?

- (a) Each Sprint is timeboxed – it has a fixed duration and ends on time, even if not all planned work is completed
- (b) Sprints in a project should have a consistent duration once established
- (c) If the team cannot finish all Sprint Backlog items, the Sprint is extended until the work is done
- (d) The Sprint Goal and Scope are not typically changed during a Sprint once it begins
- (e) During the Sprint, the Development Team can clarify scope and adjust tasks, but no new Product Backlog items are added mid-sprint

10). Which of the following best describes the role of the Product Roadmap in Agile Product Planning?

- (a) It contains task-level breakdowns of backlog items
- (b) It outlines the day-to-day tasks of developers
- (c) It is a visual representation of the product evolution over time
- (d) It must be fixed before the first Sprint starts
- (e) It is used only during Sprint Retrospective

11). What is the main focus of Portfolio Planning in Scrum?

- (a) Coordinating developers' daily tasks
- (b) Managing a collection of products with strategic alignment
- (c) Writing detailed requirements for new features
- (d) Assigning team members to projects
- (e) Creating Gantt charts for timeline planning

12). Which statement(s) about Release Planning is/are most accurate according to Scrum practice?

- (a) Release planning must lock down all budget, scope, and time variables
- (b) The Release Plan is static and not updated after Sprint 1
- (c) Release planning helps to answer questions about deliverables and timelines based on available velocity
- (d) Release planning includes Gantt chart production to help product managers
- (e) Release planning occurs only once before the first release

13). In Scrum, what is/are (a) strategic reason(s) for limiting Work In Progress (WIP) in portfolio planning?

- (a) To encourage multitasking among Scrum teams
- (b) To reduce idle work and maximize flow efficiency of product outputs
- (c) To allocate buffer time between release cycles
- (d) To prepare fixed-scope plans with higher accuracy
- (e) To limit the size of the product backlog

14). Which statement(s) best reflect(s) the economic logic promoting smaller or frequent releases in Scrum?

- (a) It increases developer satisfaction by closing sprints faster
- (b) It enables earlier ROI and quicker validation of business value
- (c) It simplifies the documentation required by each release
- (d) It avoids the need for fixed-date planning
- (e) It allows for code-freeze and more rigid release cycles

15). A team is preparing for Sprint 1 and needs to estimate how many features they can include. The team has never worked together before. According to Scrum practice, what is the best option to estimate capacity?

- (a) Ask the Product Owner to decide the number of tasks
- (b) Use historical velocity from similar projects
- (c) Use the opinions of senior team members to estimate effort
- (d) Forecast a velocity based on discussions and analogies
- (e) Skip velocity estimation for the first sprint

16). In economically sensible envisioning, what is the main risk of *too little envisioning* before development begins?

- (a) Overloading the product owner with multiple roadmaps
- (b) Miscommunication between developers and Scrum Master
- (c) The team is unprepared for the first customer-value-creation sprint
- (d) Incorrect sprint mapping and slotting
- (e) Inaccurate estimation of sprint velocity

17). Which of the following is a distinguishing (i.e. key) feature of the *two-part sprint planning* approach?

- (a) The Product Owner assigns backlog items to the team sequentially
- (b) Task estimation occurs before item selection
- (c) The team forecasts backlog items and builds confidence through task-level planning
- (d) Sprint goals are finalized before any estimation begins
- (e) Velocity metrics are ignored during capacity determination

18). Which of the following **does not** align with the principles of Sprint Review as defined in Scrum?

- (a) Stakeholders provide feedback on the increment
- (b) The Product Owner determines whether the Definition of Done is met before the Review
- (c) Sprint Review is the formal sign-off point for each Product Backlog Item (PBI)
- (d) The team adapts the Product Backlog based on stakeholder input
- (e) New PBIs may be created during the review

19). Which of the following statement(s) about the Daily Scrum is/are correct?

- I. It is a status meeting for internal and external stakeholders.
- II. The Scrum Master leads the meeting and records decisions.
- III. The team discusses impediments, progress, and plans.

- (a) I only
- (b) I and II only
- (c) II and III only
- (d) III only
- (e) I, II and III

20). During Sprint Planning, your team has a stable velocity of 30 story points. The Sprint Backlog currently has 45 points of work. Based on Scrum principles, what is/are the recommended step(s)?

- (a) Ask management to increase the timebox
- (b) Reprioritize and select Product Backlog Items that fit within 30-point capacity
- (c) Add more developers to increase velocity mid-sprint
- (d) Ignore capacity, start work, and manage mid-sprint
- (e) Switch to Kanban for this sprint

21). Which of the following statement(s) is/are true about Continuous Integration (CI) in an Agile setting?

- (a) Integration is delayed to avoid disrupting developers during sprints
- (b) Each integration triggers an automated build and test run to quickly detect any breaking changes
- (c) Can cause *integration hell*, which can occur with infrequent merges
- (d) Developers integrate their code changes frequently (at least daily) rather than waiting for the end of a phase
- (e) Removes the need for maintaining a shared code repository

22). Which of the following statements most accurately describes the technical and procedural limitations of implementing Test First system testing in Scrum?

I. Test First cannot be fully applied using Graphical User Interface (GUI) record/playback tools due to the necessity of a functioning UI at test design time.

II. Test First for system testing becomes viable only when scenario definitions are abstracted from technical UI implementation, such as via Behaviour or keyword-driven testing.

III. Acceptance criteria in Test First must be derived from automated unit tests written before user stories are created in the Product Backlog.

- (a) I only
- (b) III only
- (c) I and II only
- (d) I and III only
- (e) II and III only

23). What is the key purpose of the *Planning Game* in Extreme Programming (XP)?

- (a) To balance customer priorities with programmer estimates
- (b) To allocate tasks to developers based on their skills
- (c) To conduct risk assessment before release
- (d) To define coding standards and architectural guidelines
- (e) To manage deployment strategies and sprint reviews

24). According to Extreme Programming (XP) practices, which of the following is the primary approach to managing technical debt?

- (a) Deferring refactoring until after major features are delivered
- (b) Performing detailed design reviews and maintaining strict documentation
- (c) Continuously refactoring the codebase with collective code ownership
- (d) Assigning a separate team to handle code cleanup and bug fixes
- (e) Minimizing changes to existing modules to avoid instability

25). Which of the following statements correctly reflect the *On-Site Customer* role in an XP team?

- I. On-site customers may or may not be real customers, depending on the type of project
- II. On-site customers need to clarify requirements and act as living documentation for the team
- III. On-site customers are ultimately responsible for determining what stakeholders find valuable

- (a) I and II only
- (b) II and III only
- (c) I and III only
- (d) III only
- (e) I, II and III
